

UK Cognitive Linguistics Conference July 2020

Speed of automatization predicts performance on ‘decorative’ grammar in second language learning

A large body of research illustrates that adult second language (L2) learners do not fully master certain aspects of grammar. In particular, L2 learners experience difficulty with elements of ‘decorative’ grammar: aspects of grammar which have abstract and largely redundant meanings; for example, agreement and tense marking or subcategorization restrictions of individual lexical items (e.g. Johnson & Newport, 1989; DeKeyser, 2000; DeKeyser et al., 2010). In contrast, late L2 learners often do well on tests of ‘functional’ grammar, where aspects of grammar evidently contribute to meaning, such as the contrast between a subject and object relative (*It was the dog that the cat chased* vs. *It was the dog that chased the cat*: see Dabrowska, 2019; Dabrowska & Street, 2006; Street, 2017).

We hypothesize that the reason that the more ‘decorative’ elements of grammar are particularly challenging for L2 learners is because their correct usage requires a higher degree of automatization. When using language for communication, speakers predominantly focus on the message that they wish to convey. Thus, in order to reliably supply ‘decorative’ morphemes when required, a speaker must automatize the relevant cognitive routines. Foreign language learners typically have much less exposure to language than children acquiring their L1, and hence fewer opportunities for automatizing linguistic routines.

In this study, we examine the relationship between individual differences in the ability to automatize a complex cognitive procedure and two different aspects of linguistic knowledge; ‘decorative’ grammar (tested using a traditional spoken grammaticality judgement task, henceforth GJT), and ‘functional’ grammar (tested using a picture selection task – henceforth PST – where participants were shown two pictures; e.g. cat chasing a dog and dog chasing a cat and were required to select the picture corresponding with the sentence). The participants were 36 native speakers of German aged between 14 and 18, learning English as a foreign language. In order to measure the speed of automatization, we used the Multiple-trial Tower of Hanoi task (MToH). Participants completed the ToH task 40 times, the last 5 attempts while performing a secondary task. The dependent measure used was the difference score, or the difference in the number of moves in trials 30-35 (the last five ‘standard’ trials) and trials 35-40 (the trials with the secondary task). The more strongly the procedure for solving the puzzle is automatized during learning, the less performance will be affected when participants’ attention is divided between solving the puzzle and the secondary task. We predicted, therefore, that participants who achieved higher difference scores would also perform better on the GJT. The relationship between the difference score and performance on the PST should be weaker, since, by hypothesis, “functional” grammar does not rely as much on strongly automatized routines.

In line with these predictions, there was a significant positive correlation between performance on MToH and the GJT ($r=.30$, $p=.040$). However, the relationship between MToH and PST was close to zero and not significant ($r=.085$, $p=.316$).